



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,061	06/29/2005	Derrick Diarmuid Robertson	36-1912	6111
23117	7590	06/12/2009	EXAMINER	
NIXON & VANDERHYE, PC			FAN, HUA	
901 NORTH GLEBE ROAD, 11TH FLOOR				
ARLINGTON, VA 22203			ART UNIT	PAPER NUMBER
			2456	
			MAIL DATE	DELIVERY MODE
			06/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,061	ROBERTSON ET AL.	
	Examiner	Art Unit	
	HUA FAN	2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 April 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2 and 5-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,2 and 5-21 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 15 April 2009 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>4/15/09; 6/2/09</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

1. This office action is in response to amendment/reconsideration filed 4/15/2009, the amendment/reconsideration has been considered. Claims 1-2 and 5-21 are pending for examination, the rejection cited as stated below.

Response to Arguments

2. Applicant's arguments have been fully considered but they are not persuasive. In the remarks, applicant argued

(a) (on page 22 with respect to claim 1) the motivation of combining Jaskiewicz with Rhea that the combination will possibly overloading the computer with software as the size of the network expanded,

(b) (on page 22 with respect to claim 1) that Jaskiewicz does not teach that the data item and the storage condition might be forwarded to another of the host computers.

As to point (a), it is not clear how “the computers in the system would quickly become overloaded with software as the size of the network expanded”, when the system disclosed by Jaskiewicz is combined with Rhea to modify the host computer to also act as a router to forward data item and storage condition, and how that is related to the validity of combination of the reference. See rejections section for details on the motivation of combination.

As to point (b), in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is the combination of Jaskiewicz and Rhea that teaches this limitation, not Jaskiewicz or Rhea alone. In addition,

Rhea discloses a distributed resource directory (routing table) that avoids the need for centralized resource directory.

Any remark regarding limitations not claimed is not being considered by examiner.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the amended limitation “to measure and then provide...” in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph for reason set forth in the objection to the **Drawings**. It is suggested that applicant could overcome 112/first paragraph rejection by providing a suitably detailed system diagram (with appropriate cross-indexing in the detailed description to reference numerals on said system diagrams.) No new matter should be added.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-2, 5, 10, 13, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al (US publication 2003/0061491), in view of Rhea et al (“Maintenance-Free Global Data Storage”).

As to claim 1, Jaskiewicz et al discloses a distributed storage network comprising a plurality of interconnected computers (figure 1), said computers including a plurality of host computers (figure 1, “Host Electronic Device”) and at least one client computer ([0019], lines

16-31, "the user's request includes storage location attributes desired by the user. The request may be in the form of a specific request from a particular device or process"; it is to be noted that the Host Electronic Device can also act as the client computer in response to user's input request, as indicated in [0019], lines 16-31, "the network storage policy may be input into the storage allocator...systems administrator may select certain storage attributes to be applied to the network..."), wherein said client computer stores client code comprising:

- a) storage initiation code executable to initiate storage of a data item on one or more of said plurality of storage devices ([0019], lines 14-20, "requests storage from the storage allocator...includes storage location attributes desired by the user...from a particular device or process"; [0015], lines 4-7, "data accessed by remote user" means both "read data" and "write data");
- b) storage condition generation code executable to generate one or more interpretable storage conditions indicating characteristics of storage device suitable for storing said data item ([0019], lines 14-20, "An authorized user...requests storage from the storage allocator...includes storage location attributes desired by the user...from a particular device or process"); wherein each of said host computers stores host code including:
- c) host computer characteristic provision code executable to measure and then provide host characteristic data indicating one or more characteristics of said storage device ([0019], lines 6-13, host storage allocator identifies and records characteristics of storage device; [0021], "discoverable attributes of the storage device identified by the storage allocator 3". "identifying storage locations" and then "record attributes of the storage locations" are equivalent steps to "measure and then provide");

d) condition interpreter code executable to interpret said one or more interpretable storage conditions in the light of said one or more host characteristics provided by said host computer and thereby to establish whether said storage device meets said storage conditions ([0020], lines 1-8, "After a storage request is received, the requested storage attributes are compared with the attributes of the available storage locations. A determination is made as to whether there is a match based on the comparison");

e) data item storage code executable to store said data item in said storage device on the execution of said condition interpreter code finding that said storage device meets said requirements ([0020], lines 1-8, "If a match of the requested storage attributes is found in an available storage location, the storage location is allocated to a specific process or device in response to the request"; [0015], lines 17-20, "host electronic devices 2, 6, and 10 back up all data on RAID sets with specified attributes...").

Jaskiewicz et al does not expressly disclose the storage devices are themselves host computers, and f) data item forwarding code executable, on the execution of said condition interpreter code finding that the host computer does not meet said conditions, to forward said data item and said storage condition to another of said host computers.

Rhea et al discloses each network node can act as a server that stores objects (page 43, left col., lines 9-12, "Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these"); and data item forwarding code executable, on the execution of condition interpreter code finding that the host computer does not meet a condition, to forward data item and storage condition to another of host computers (page 43, left col., lines 9-12, "Each network node can act as a server the stores

objects, a client that initiates request, or a router that forwards messages, or as all of these”; lines 15-26, when the current node does not meet condition, i.e., when its NodeID does not equal to the destination NodeID, then forward to another of the host computers. The messages that are forwarded/routed include both data items and condition, i.e., destination NodeID).

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz et al, with the teachings disclosed by Rhea regarding each network node can act as a server that stores objects, and data item forwarding code executable, on the execution of condition interpreter code finding that the host computer does not meet a condition, to forward data item and storage condition to another of host computers. The suggestion/motivation of the combination would have been to address common need for persistent storage by means of an Internet-based, distributed storage system, to let devices transparently share data and preserver information even when devices are lost or damaged (Rhea, page 40, left col., lines 12-18).

As to claim 2, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said storage initiation code causes the execution of said storage condition generation code (Jaskiewicz, [0019], lines 14-19, “requests storage from the storage allocator...includes storage location attributes desired by the user...The request may be in the form of a specific request from a particular device or process” indicates the storage location attributes desired by the user sent from a particular device or process are tied up with the specific storage request, therefore generating such storage condition for the specific storage request is caused by the storage request generation), said storage initiation code further sending said storage condition with said data item to one or more of said host computers (Jaskiewicz, [0019],

lines 14-19, “requests storage from the storage allocator...includes storage location attributes desired by the user...The request may be in the form of a specific request from a particular device or process” where the particular device or process requesting storage implies requesting storage of data items; also see Rhea, figure 1, “connected pools or storage domains, among which data freely flows”, page 44, left col., lines 26-29, "data would be replicated and geographically distributed to protect it from hardware failure...").

As to claim 5, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which at least one of said computers stores both said client code and said host code (Jaskiewicz, [0019], lines 16-31, "the network storage policy may be input into the storage allocator...systems administrator may select certain storage attributes to be applied to the network..."; Rhea, page 43, left col., lines 9-12, "Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these").

As to claim 10, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said condition interpreter code interprets said one or more interpretable storage conditions using schema data which indicates a common structure for said interpretable storage conditions (Jaskiewicz, figure 4, schema data indicating common structure such as device ID, storage location, and whether or not and which device/process the storage is currently allocated to, as also disclosed in [0022], lines 11-17).

As to claim 13, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said host computer characteristics include stored data item description data which describes data items already stored at said host computer (Jaskiewicz, figure 4, component

64 indicates that storage or host (combined with Rhea, see rejection to claim 1), has assigned 200 Megabytes to process 25, which implies that zero or more bytes of data from process 25 is stored at this storage location).

As to claim 15, Jaskiewicz et al discloses a distributed storage network comprising:

a plurality of interconnected computers (figure 1), each computer being operable to store data in one or more memories under the control of said computer ([0015], “A host electronic device is a system containing data which is typically accessed by a user from a remote location...host electronic devices back up all data on RAID sets...”);

each of said computers having access to processor executable code ([0015], “mail server, web servers...software facility”), said code comprising:

- a) data item reception code processable to receive a data item ([0015], “A host electronic device is a system containing data which is typically accessed by a user from a remote location”; [0019], lines 14-16, “requests storage from the storage allocator 3”);
- b) data item storage requirements discovery code processable to find one or more requirements relating to said data item ([0019], lines 16-20, “storage location attributes”);
- c) storage information provision code processable to measure and then provide storage information concerning one or more memories of said computer ([0015], lines 7-14, “also located on the host electronic device 2 is a list of storage devices and their associated attributes”; see similar rejection to claim 1);
- d) comparison code processable to compare said data item storage requirements with said storage information provided by said computer ([0020], lines 1-5, “the requested storage attributes are compared with the attributes of the available storage locations”); and

e) storage decision code processable to decide whether to store said data item in said one or more memories in dependence upon said comparison ([0020], lines 3-17, whether or not allocate storage depends on whether a match has been found); and

f) data item storage code processable to store said data item at said host computer on execution of said storage decision code finding that said computer meets said storage conditions
(see similar rejection to claim 1)

Jaskiewicz et al does not expressly disclose g) data item forwarding code executable to forward said data item and said storage condition to another of said host computers on execution of said storage decision code finding that said computer does not meet said storage conditions.

Rhea et al discloses data item forwarding code executable to forward data item and storage condition to another of host computers on execution of storage decision code finding that the computer does not meet the storage condition (page 43, left col., lines 9-12, “Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these”; lines 15-26, when the current node does not meet condition, i.e., when its NodeID does not equal to the destination NodeID, then forward to another of the host computers. The messages that are forwarded/routed include both data items and condition, i.e., destination NodeID).

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz et al, with the teachings disclosed by Rhea regarding data item forwarding code executable to forward data item and storage condition to another of host computers on execution of storage decision code finding that the computer does not meet the storage condition. See similar motivation in claim 1 rejection.

Claim 16 is a method claim corresponding to the distributed storage network claim 1. Therefore it has been analyzed and rejected based upon the distributed storage network claim.

Claim 17 is a computer readable storage medium claim corresponding to method claim 16's limitations: steps a) and b). Therefore it has been analyzed and rejected based upon the method claim.

Claim 18 is a computer readable storage medium claim corresponding to method claim 16's limitations: steps c), d) and e). Therefore it has been analyzed and rejected based upon the method claim.

Claim 19 is a computer readable storage medium claim corresponding to method claim 16. Therefore it has been analyzed and rejected based upon the method claim.

Claim 20 is a host computer claim corresponding to the distributed storage network claim 1. Therefore it has been analyzed and rejected based upon the distributed storage network claim.

Claim 21 is a method claim corresponding to the distributed storage network claim 1.

Therefore it has been analyzed and rejected based upon the distributed storage network claim.

8. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of ON (official notice).

As to claim 6, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said one or more interpretable storage conditions are stored at one or more of said computers (Jaskiewicz, [0015], lines 9-11, "Also located on the host electronic device 2 is a list of storage devices and their associated attributes"), but does not expressly disclose the storage is persistent. An official notice is taken there that it is a design choice to store data persistently.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by ON regarding storing data persistently. The suggestion/motivation of the combination would have been to provide fail protection.

As to claim 7, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 6 wherein said persistent storage is provided by a database stored at each of said one or more computers providing persistent storage of said interpretable storage conditions (ON, it is a design choice to store data persistently in a database).

As to claim 8, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 6 in which one or more computers further stores condition editor code executable to provide a user with an interface enabling the user to update said interpretable storage conditions or to record new interpretable storage conditions (Jaskiewicz, [0019], lines 25-31, “systems admin may select certain storage attributes to be applied to the network from available choices in pull down menus”).

As to claim 9, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 8 in which said client computer further stores said condition editor code (Jaskiewicz, [0019], lines 25-31, “The network storage policy may be input into the storage allocator 3 in a number of ways. The systems admin may select certain storage attributes to be applied to the network from available choices in pull down menus. Alternatively, the storage allocator 3 may accept input text instructions which are parsed to establish attributes to be applied to network storage operations” indicates the storage allocator on host computers stores condition editor code, and the host computer acts as client computer, also see Rhea, page 43, left col., lines 9-12,

“Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these”).

9. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of Chatterjee et al (US publication 20020099815).

As to claim 11, Jaskiewicz-Rhea disclose the claimed invention substantially as claimed as discussed in claim1, but does not expressly disclose action data indicating actions to be carried out by one of said computers on said host computer meeting said storage condition. Chatterjee et al discloses event action data indicating actions to be carried out when the event meets the condition defined in the event trigger list ([0025]).

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by Chatterjee et al regarding event action data indicating actions to be carried out when the event meets the condition defined in the event trigger list. The suggestion/motivation of the combination would have been to improve the user friendliness by allowing user to define these lists (Chatterjee et al, [0025]).

As to claim 12, Jaskiewicz-Rhea-Chatterjee discloses a distributed storage network according to claim 11 in which said rules data structure forms a component of a policy data structure which further includes event data indicating one or more events which must take place in order to trigger the execution of said condition interpreter code (Chatterjee, [0025], the event trigger list is the data structure that includes event data indicating one or more events which much take place in order to trigger the execution of interpreting action list and alarm list).

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of Stadel et al (US patent 6128590).

As to claim 14, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said interconnected computers comprise computers having differing hardware architectures and operating system programs stored thereon (Rhea, figure 1, PC, PDA, cell phone have differing hardware architectures and operating system programs), but does not expressly disclose storing common machine emulation code executable to translate code executable on said common machine to code executable on the hardware architecture and operating system of the machine on which the emulation code is executed. Stadel et al discloses storing common machine emulation code portable and are therefore translated (recompiled) for the destination hardware (col. 3, lines 40-49, "The two other program parts C and D...are portable and are therefore translated (recompiled) for the destination hardware...NOP represents a dummy command on the destination hardware (emulation code)").

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by Stadel et al regarding storing common machine emulation code portable and are therefore translated (recompiled) for the destination hardware. The suggestion/motivation of the combination would have been to improve code portability.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUA FAN whose telephone number is (571)270-5311. The examiner can normally be reached on M-F 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. F./
Examiner, Art Unit 2456

/Yasin M Barqadle/
Primary Examiner, Art Unit 2456